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ABSTRACT

The lack of a universal definition of creat ty has led to the assessment of creativity according to the definit..n favored by the evaluator. These assessments fall into four groups. The first centers around the concept of the creative product; it assesses a tangible event or relationship that results from the creative process, which is implied but not assessed. In this group, the work of one person is evaluated by a second person or group. A second group is concerned with the psychological health of the creative person and uses very subjective assessment techniques. A third group studies the environment in which creativity occurs on the premise that creativity can be facilitated or debilitated by environmental manipulation. It investigates the past or present environment of a creator. A fourth group studies the creative process and consists of the affective and cognitive schools. The cognitive school views creativity as primarily an ability; the affective school views it as primarily an attitudinal phenomenon. These schools use observer, symbolic-task, remote associates, and interview approaches. These groups can be integrated and their functional relationships explained through a model based on a simple electric circuit: creative and convergent production are connected by an ability line which runs through an affective facet to draw from our experiences. As the attitude is depressed, creative production is short-circuited; as the attitude is heightened, creative production is increased. This model can be used to test a number of hypotheses about creativity. (KM)

CREATIVITY: CONCEPTS AND EXPLORATIONS

by

T. Jerome Rookey

The central problem in creativity is the lack of a universal definition or, to put it another way, the existence of a multitude of definitions. This writer defines creativity as the conception by an individual of an event or relationship which, in the experience of that individual, did not previously exist. This definition does not agree with those which require a tangible product, nor does it agree with the position that creativity must have social worth. Finally, it does not agree with the theory that a creative product must be totally unique. Every definition that this writer has reviewed has stood in opposition with some facet of at least one other definition.

The answer to the lack of a universal definition has been to assess creativity relative to the definition favored by the evaluator. The resulting working definitions can be separated into groups. The first group centers about the concept of the creative product. This group assesses a tangible event or relationship that results from the creative process. The creative process is thus implied but not assessed. Questions of social worth, uniqueness and historical aesthetics are especially relevant to this group.

The second group is concerned with the creative person. The mental health, or psychological totality, of the creator is the concern of this group. The lack of deviations from mental health is the usual measure of this group. Questions of creative process are simply not a consideration of this group. The product of creativity has worth but only as an indicator of the state of the person.

The third group is the largest and, internally, most splintered group. This group is primarily concerned with the creative process. Usually, this process is studied as a problem-solving process distinct from convergent problem solving. The two major schools are the affective and cognitive. There are a multitude of subgroups within these two schools. The goal of this group is to ascertain what internal mechanisms act to cause a creative product and eventually to affect these mechanisms for greater creativity.

The fourth group is the smallest and least studied. This group studies the environment where creativity occurs. The basic concept here is that creativity can be facilitated or debilitated by manipulating the environment of the creator. The other three groups all touch on this group but very few researchers have concentrated on the question of the creative environment.

It should be readily apparent that these four groups cannot be completely separated. Likewise, many of the problems of creativity assessment are common to all four groups. The question of reliability is a sore tooth for all four groups. Very few of the measures used have been standardized which greatly effects reliability. In many of the techniques, scoring accuracy is a very big source of nonreliability. If reliability is a sore tooth, validity is a gaping wound. Every conference on creativity is rampant with claims and accusations concerning validity, or its absence. The question of validity is too deeply enmeshed with the definitions of creativity to ever be resolved as issues now stand.

The creative product group approaches creativity assessment in the most traditional manner. The work of one person is evaluated by a second person or a group. The evaluator is usually considered to be an expert. While this approach to measurement is easily criticized, it has

been and continues to be an everyday experience for creators. Children are judged by adults, producers are judged by consumers and contestants are judged by panels. There is a very obvious value to this type of assessment if the goal is a specific creative product such as a design for a given individual's home. The problem is that evaluators tend to go beyond the product and attempt to judge the creative ability of the creator. The central fault with this approach lies in its lack of reliability. The creative product is judged in a narrow context by a subjective system. Change the context and the product's creativeness changes. Change the evaluators and the evaluation changes. Interrater reliability can be increased by training but the question of context remains.

The creativity environment group utilizes two approaches to assessment. Both approaches are dependent upon the utilization of a recognized creator. The better known of the two approaches is that of investigating the past of a recognized creator. The usual approach is to seek highlights which are common to several recognized creators. This method is open to a multitude of rather obvious criticisms. The two most critical problems are first, that people remember selectively and second, that there is no comparison group used. At the end of a study, a long list of environmental factors are drawn up which may or may not be accurate and which may or may not be unique to creators.

The second approach of the environmental group is to investigate the present environment of a creator. This method is extremely dependent upon the perceptiveness of the investigator. It also assumes that the environmental factors are visible. The major criticism leveled at this approach is that it doesn't explain why one man creates and a second doesn't when they share an environment.

The group of investigators interested in the creative person is usually associated with either the psycho-analytic or the self-actualizing schools of psychology. The psycho-analytic school uses a subscale of the Rorschach Test to measure the creative person. The reliability of this group is very low. The approach of the self-actualizing school is to assess the completeness of the person. The more complete he is, the more creative he is. This approach is much easier to use if the person is incomplete and thus not creative. As this approach is extremely subjective, this writer feels that it is not a valid assessment technique. It should be borne in mind that the creative person group is not really interested in assessment. This group tends to deal in terms of mental health and assessment is merely a by-product.

The final group is concerned with the creative process. This group is very splintered with the major split being between the cognitive and affective domains. The cognitive school views creativity as primarily an ability. The affective school views creativity as primarily an attitudinal phenomenon.

Within the cognitive process school, there are a multitude of approaches. Most of these are variations of three approaches. The first approach is to use an observer to assess the ability of a creator. The observer studies the creator over a period of time and then completes some form of rating scale, such as Dr. Ellen Greenberger's Curiosity Checklist. This approach is extremely dependent upon the ability of the rater. There have been several studies which question the reliability and validity of this approach.

The second approach of the cognitive group is to have the creator do something and rate his performance at that task. The tasks vary considerably in range from very wide multidimensional to very narrow technical in scope. The form of the task ranges from very open interpretive to highly standardized machine scored tasks. The scoring runs from macro-creativity scores to sets of interrelated micro scores. The major criticism of this approach is that the task is too limiting. The creator has to be assumed to be universally creative if he is to react to a given stimulus at a given point in time. A second criticism is that the test may be measuring the depth of a subject's background rather than his ability to create, particularly as task becomes more technical. One point in favor of this approach is that the better tasks tend to have a high intertrial consistency.

There is a major question concerned with the scoring of symbolic-task tests. Since each test has to be hand corrected, a large number of test correctors is necessary. This means that the interpretation of the creator's response is subject to who corrects his test. The adequacy of the test corrector is a crucial factor. A test corrector must have vast experience and take great pains to give each test a fair scoring.

The final cognitive approach to creative ability is different from the others. In this approach, a stimulus is given and the creator responds by naming events associated with the stimulus. The goal is to give more and more remote associations which are still relevant. The remote associate tests, such as Dr. Lynch's and Dr. Mednick's, thus deal with the ability to perceive the relationships between events. This approach has great credence where fluency is emphasized. The major criticism is

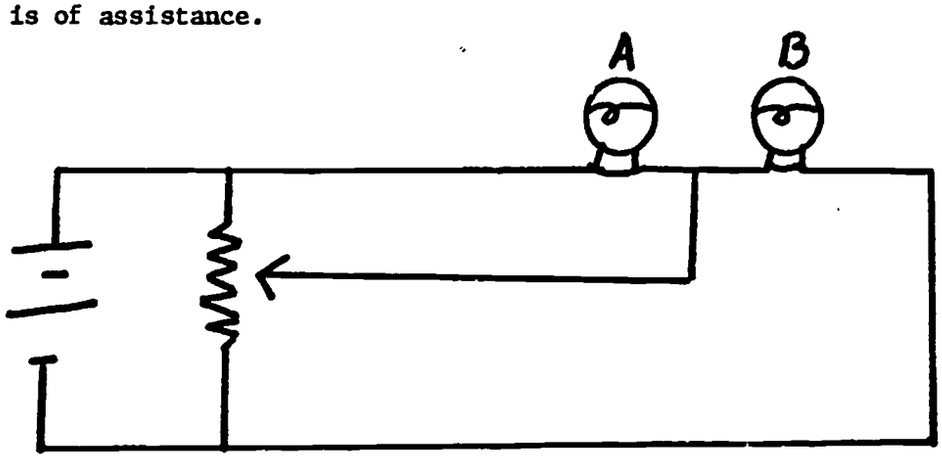
that the observer must be able to assess the degree of remoteness of responses as well as their relevancy. It would seem that every response would have to be discussed to judge its quality. Like the hidden figures approach, there is also a question of the task being too narrow.

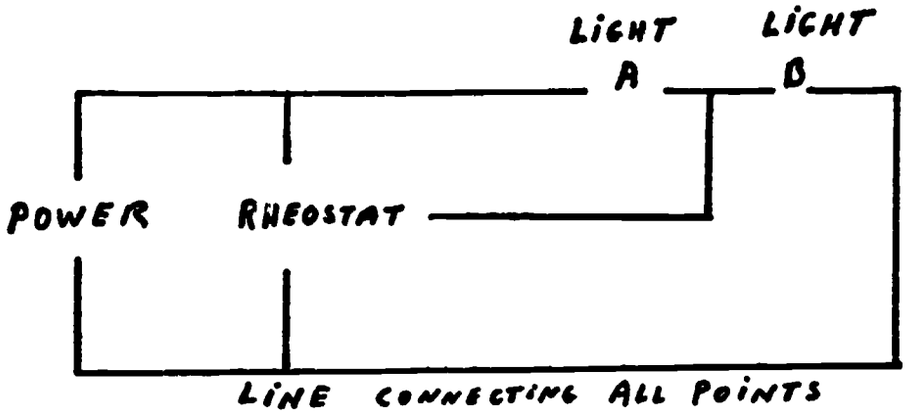
These three approaches, (observer, symbolic-task, remote associates,) form the basic assessment tools of the cognitive school of the creative process group.

The affective school of the creative process group is much newer than the cognitive school. There are only two basic approaches and they are not really independent of each other. The first approach is to interview the creator to assess his attitudinal set. This approach is seldom used because it is so unreliable. The second approach is to standardize the interview situation. Usually a situation is described and the creator reports to what degree he is attracted or repelled by the situation. A Likert Style Inventory has been used in the Covington's Scale, Rookey's PACT, and University of Wisconsin Tests. A Q-Sort has been used by Dr. Barberhouse. This approach is easily standardized and tends to have high reliability. The major criticism is that the item population is not well sampled. The measures may only sample the obvious situations and thus not adequately represent the attitudes that are present in the creative process. In addition, there is criticism that these tests, being self-report, reflect the creator's view of the desired response rather than his true response.

Given the position that each of the varied groups has some logical basis for existing and yet each failing to totally explain creativity, one should now be faced with the necessity of integrating the groups. The problem posed is how to explain the functional relationships created by the integration. By this I mean how does one decide the order and degree of influence of the cognitive versus the affective versus the environment.

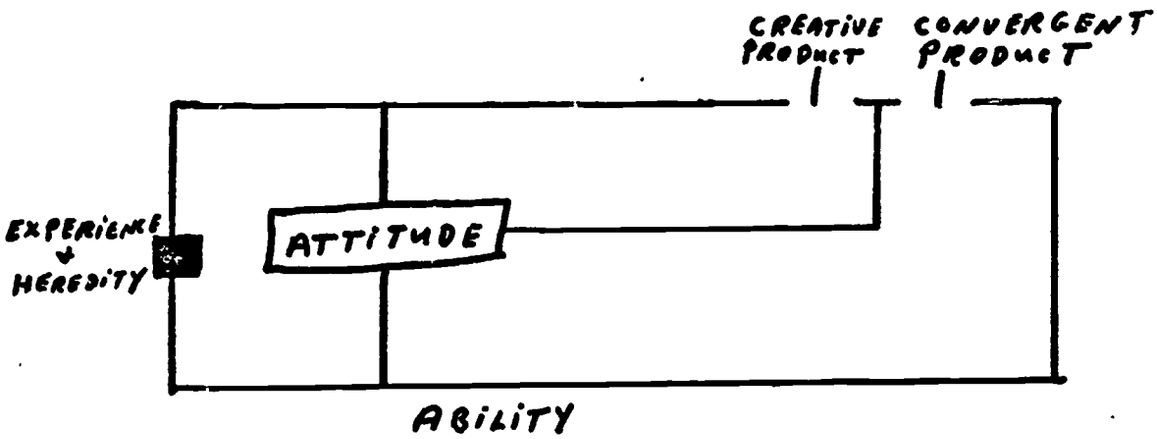
It is my contention that a model drawn from another discipline and applied to creativity is one feasible method of clarifying the relationships. In this case the diagram of a simple electric circuit is of assistance.





In the electric circuit there are two lights on a power line. The line connects the two lights to a rheostat and a power source. If the rheostat is turned down, light A is short-circuited and light B is brightened. If the rheostat is turned up, light A brightens and light B is dimmed.

To fit creativity to our electric circuit, we replace the various electronic components with facets of the creative process. The two lights are considered to be Creative Production and Convergent Production. The power line is replaced by Creative Ability. The rheostat is replaced by the affective process (creative attitude). The power source is replaced by the net sum of one's experiences and heredity.



Our creativity circuit then is: creative and convergent production connected by an ability line which runs through an affective facet to draw from our experiences. As the attitude is depressed, our creative production is short-circuited. As the attitude is heightened, our creative production is increased.

The reason for developing a model is to test that model. The adequacy of the model is tested by proving the various hypotheses which the model itself suggests.

In the case of our creativity circuit, we can immediately see many hypotheses about the relationships of the cognitive and affective facets of creativity.

One hypothesis is that the affective side of creativity serves as a monitor for the cognitive side. In past research (Rookey and Reardon, 1972), I have found a significant relationship between affective pretests and cognitive posttests but not between cognitive pretests and affective posttests. This would lead me to support the concept that the affective serves as a monitor to the cognitive in much the same way as a rheostat monitors electric flow.

The model presented here, the creativity circuit, could be used to go about an orderly testing of hypotheses to discern the nature of creativity. Such hypotheses could be:

1. If we remove the affective, do we find that creative production and convergent production are interdependent?
2. Does creative production function inversely to convergent production?
3. Do the same attitudes function with creative and convergent production and, if so, are the two forms of production at opposite ends of the attitudes?

There are a multitude of additional hypotheses that would arise as the model was tested. My contention is simply that this or some other specific model must be used to incorporate the affective and cognitive components of creativity if we are to ever successfully define what creativity is.